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GB 2044079 A
GB 2042670 A
GB 1560721
GB 1453476
GB 1436880
GB 1403281
GB 1392547
GB 1391604
GB 1366543
GB 1188743
GB 1166851
GB 1137675
GB 1098851
GB 1063713
GB 1021879
GB 904278
GB 892110
GB 677263
GB 628537
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(54) **Improvements in or relating to shelf supports for merchandise display systems**

(57) A multi-sided post for supporting shelves for merchandise display systems comprising an extrusion consisting of an axial core from which radiate webs formed at their outer parts with corner pieces which in combination with the webs divide the interior of the post into a plurality of undivided channels in which can be located means for engagement by adjacent ends of shelf-supporting brackets in such a manner that said brackets can be adjusted vertically to suit different required predetermined shelf levels and then gripped and locked in adjusted set positions.

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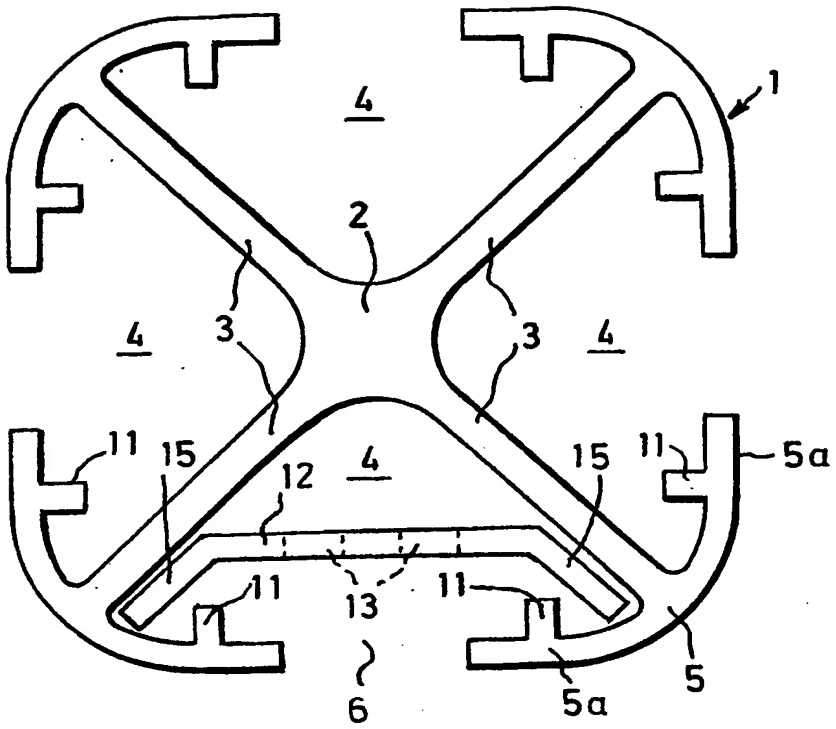
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FIG. 1.

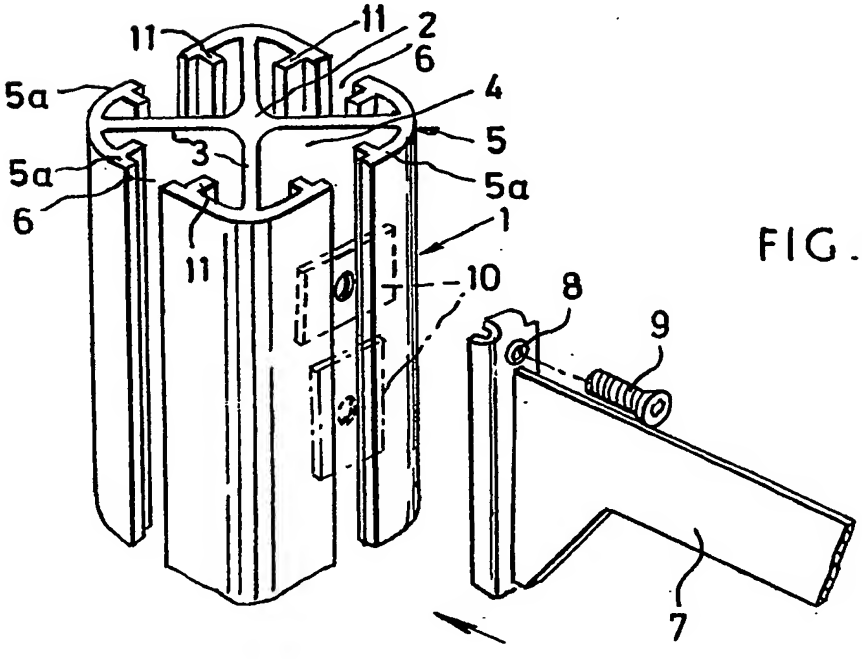
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FIG. 2.

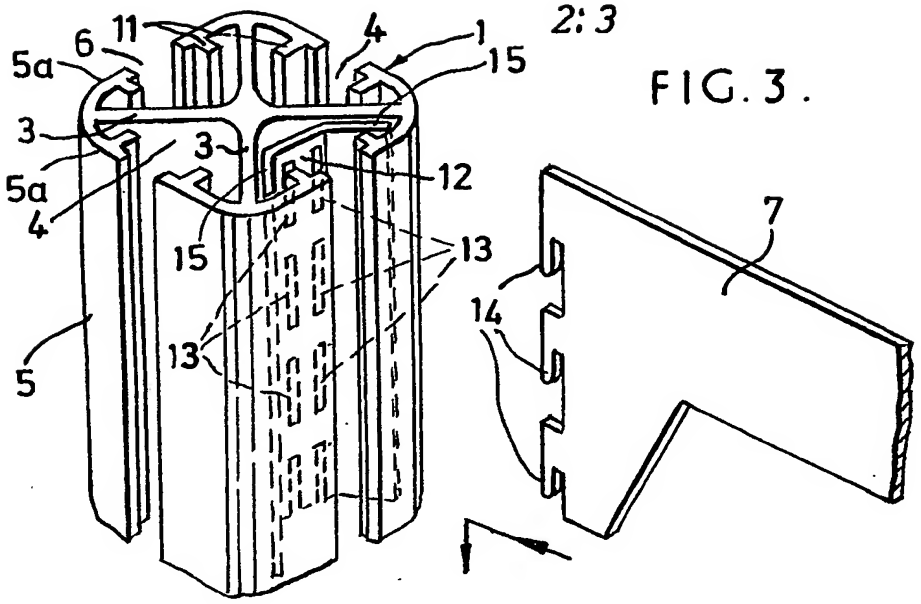


FIG. 3.

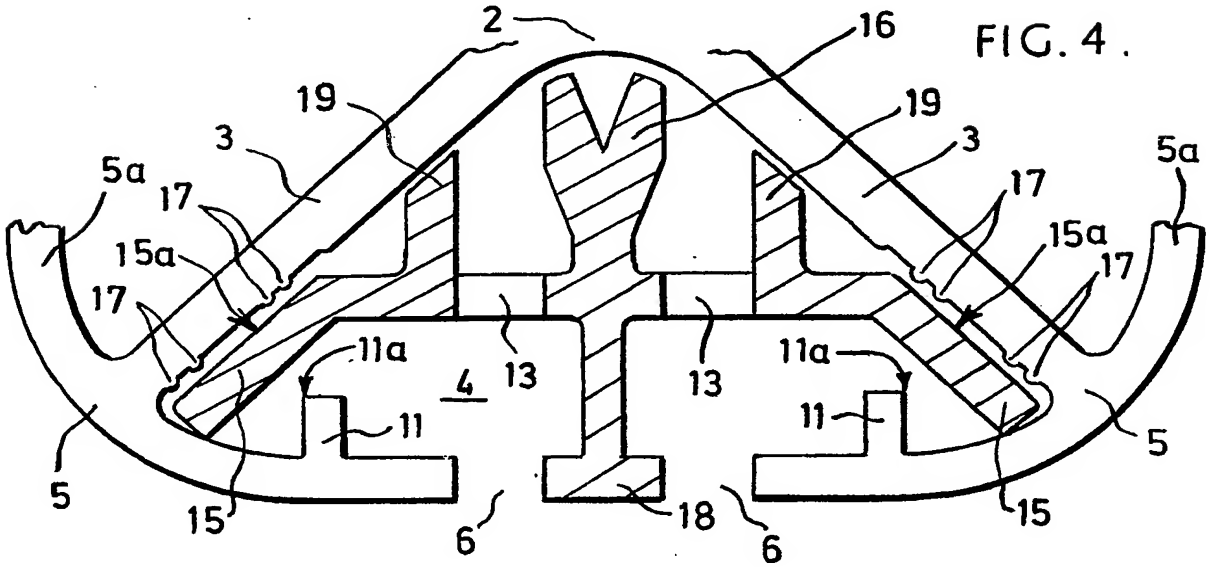


FIG. 4.

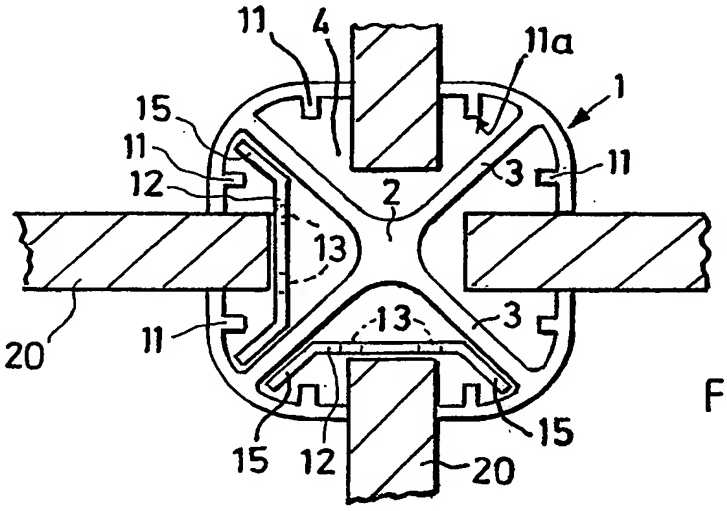


FIG. 5.

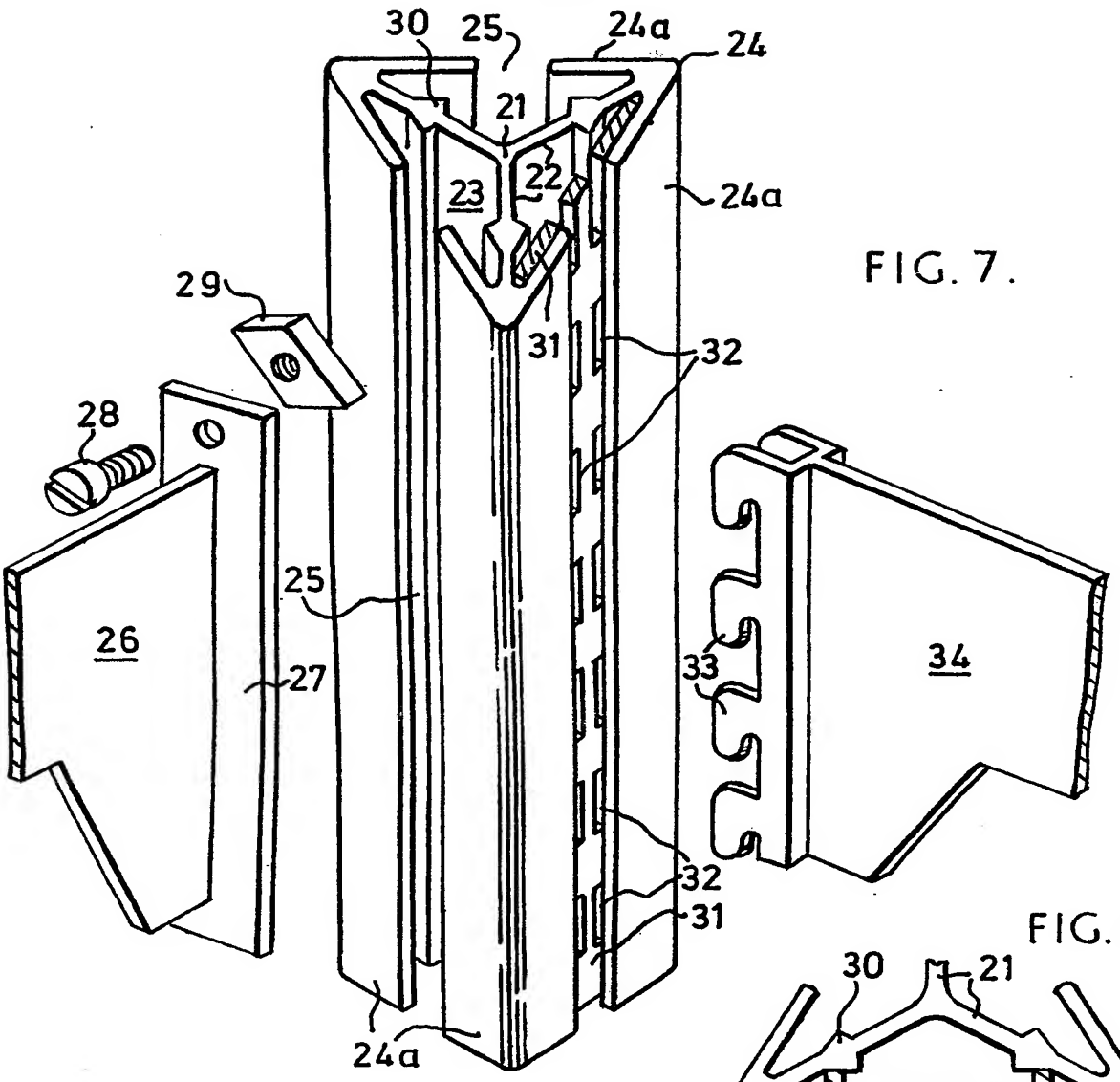


FIG. 7.

FIG. 8.

FIG. 9.

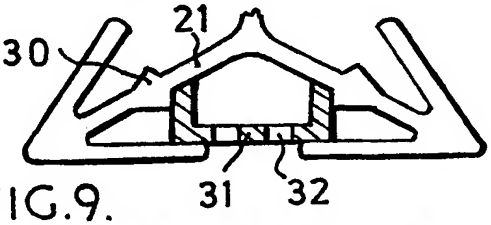


FIG. 10.

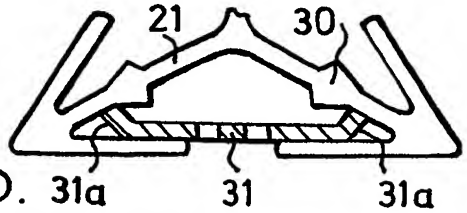
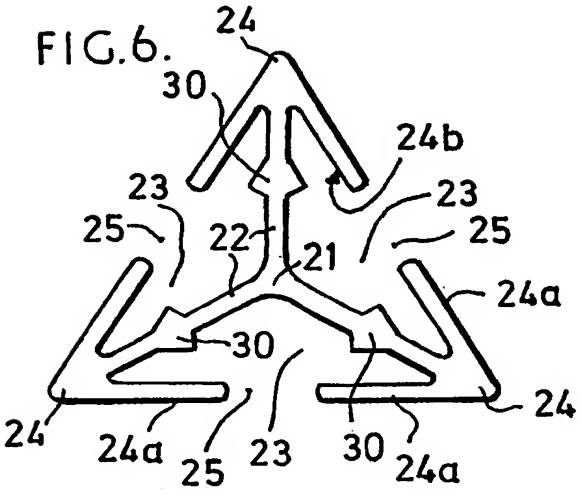


FIG. 6.



SPECIFICATION

Improvements in or relating to shelf supports for merchandise display systems

This invention relates to support posts or columns intended more particularly, although not exclusively, for supporting brackets for shelves of merchandise display systems but which may, as will hereinafter become obvious, be used for supporting other display fittings and also for receiving marginal edge portions of partition walling.

In particular the invention concerns the construction of columns adapted to receive shelf brackets located at desired different predetermined heights on the column.

One object of the invention is the provision of a column capable of having shelf brackets slidably connected thereto and set at infinitely variable heights, or alternatively, hooked thereon at predetermined selected heights.

According to this invention there is provided a multi-sided post or column comprising an axial core from which radiate a number of webs defining single and undivided channels between themselves, the outer edge of the webs having extending each side thereof corner pieces, and wherein adjacent corner pieces are spaced apart at opposed edges to leave a vertical slot in each side of the post through which an end of a support bracket, or a marginal edge of partition walling, may be inserted and held in position by retaining means engageable in said slots, said retaining means comprising (a) either a toggle or clamping piece intended to be inserted through said slot and turned so as to bridge the latter at the inside of the post and to become positioned and vertically slidable and held against rotation between parallel guide ribs on the respective inner faces of the corner pieces or between ribs in said webs and which toggle or clamping pieces is fixedly engageable by a tenon provided at a fixing end of a bracket, or (b) comprises a slotted strip or insert that is inserted endways into a channel at a side of the post and that can be engaged by hooks provided on the fixing end of a bracket.

According to one embodiment said slotted insert is of channel-like cross section that opens outwardly of the post and having the side flanges thereof disposed at an obtuse angle to the base in which the slots are formed, said side flanges, under the influence of the weight of merchandise supported by shelving on the brackets being caused to bear against the radiating webs and acting to cause the slotted strip or insert to become a friction-tight fit in the channel and so locate the bracket at a predetermined required height.

According to requirements either of said retaining means may be used at a side of the post, i.e. the toggle device or the slotted insert, the selected retaining means co-acting with the ribs on the inner faces of the corner pieces.

To enable the invention to be clearly understood and readily carried into effect embodiments thereof will now be described by way of example with reference to the accompanying drawings, wherein:—

Figure 1 is a transverse cross-section of the post of one embodiment.

Figure 2 is a perspective view on a reduced scale showing a fragment of the post being fitted with a bracket by a toggle and tenon connection.

Figure 3 is a view similar to Figure 2 showing a fragment of the post being fitted with a bracket by a slot and hook connection,

Figure 4 illustrates a modified form of slotted insert for engagement in a single channel at a side of the post.

Figure 5 is a view illustrating how a post can be used to receive and locate marginal edges of wall panels or partitions.

Figure 6 is a transverse cross-section of a post constructed according to a second embodiment.

Figure 7 is a perspective view showing a fragment of the post of Figure 6 and indicating one side thereof how a toggle-fitting (previously referred to as (a)) can be fitted and at another side how a slotted insert strip (previously referred to as (b)) can alternatively be fitted and

Figures 8, 9 and 10 are fragmentary views illustrating modified forms of insert strips for use with the post of Figure 6.

Referring firstly to Figures 1 to 5 of said drawings the post 1 is four-sided and consists of an extrusion of aluminium or other suitable material capable of being cut to a required length. This post comprises in transverse cross section, a centre portion or core 2 extending axially for the complete length of the post and is formed with four radial webs 3 that combine to form four undivided single channels 4 partially closed at their mouths by arcuate corner pieces 5 each consisting of portions 5*a* that extend one to each side of each web 3 so as to leave between themselves a slot 6 and against which said portions 5*a* can be abutted means for receiving the inner ends of shelf brackets 7 as about to be described with reference to Figures 2 and 3.

Referring firstly to Figure 2, the inner end of a bracket 7 is formed with a tenon 8 that can be engaged between and overlap the edges of the gap 6 between adjacent portions 5*a* of the corner pieces 5 and screwed by screws 9 at its upper and lower ends to toggle or clamping pieces 10 having serrated or roughened surfaces and which, after the brackets 7 has been slid to a required height can, by final tightening of the screws 9, be gripped against the inner marginal faces 5*b* of the corner pieces so as to hold the bracket 7 at an infinitely variable desired height.

The inner faces of the arcuate corner pieces 5 are formed with inwardly directed longitudinal ribs 11 between which the clamping pieces 10 may be guided and slide, the latter each being passed by its smaller dimensions through the gap 6 and then turned through 90° so as to bridge the gap and become located between said ribs 11.

Referring next to Figure 3, this illustrates an arrangement wherein a channel 4 may have slid into it in an endways direction a rolled steel strip or insert having a main section 12 formed with a single or double line of slots or piercings 13 in selected slots of which may be engaged single hooks 14 of a bracket 7, the strip comprising angularly disposed side

sections or wings 15 that are disposed at an obtuse angle to the main section 12 in planes substantially parallel to the faces of the webs 3.

The arrangement is such that a strip 12 becomes a friction-tight fit in a channel 4 due to the fact that under the influence of the weight of merchandise supported by a shelf mounted on the brackets 7 the strip 12 is drawn forwardly toward the ribs 11 and caused to abut by its side sections 15 against and frictionally co-act with the webs 3 and making contact by inwardly seating in the respective tapered faces of the webs, the tips of the wings 15 just clearing the root radius where the webs and corner pieces merge together. In this manner the strip 12 is held against longitudinal movement and the bracket held fixed at a required height.

According to a modification illustrated by Figure 4 the strip 12 is a moulding of a suitable synthetic material and is formed with a rearwardly directed portion 16 that abuts against the rounded innermost face 4*a* of a channel and prevents the strip moving back into the channel. This Figure also illustrates how the faces of the webs 3 may be ribbed as indicated at 17 so as to relieve the friction between the faces of these webs and the opposed faces 15*a* of the angularly disposed side wings 15 of the strip 12. Similar ribs 17 (not shown) may also be provided on the webs 3 in Figure 1.

The slotted strip or insert 13 having two lines of slots as shown in Figures 3 and 4 provides adjustments of brackets to left and right of post centre and necessitates the use of two brackets per shelf making the system truly modular.

The forwardly facing rib 18 serves to screen and hides the core 2 of the post and this rib 18 in combination with the portion 16 and rearwardly directed fine 19 serve to locate a bracket or brackets 7 providing restraint from sideways rocking of a bracket.

When installing a system a post with a slotted insert therein can be jacked up from the floor by a simple screw jack in order to adjust the slotted inserts vertically to compensate for variations in floor levels. The posts may be fitted at their lower ends with locating sockets.

Although normally a strip 12 would not be required when using the toggle and tenon connection illustrated by Figure 2, a post may be provided with such a strip 12 for receiving hooked brackets because even if hooked brackets are not available toggled brackets with tenons 8 and co-acting clamping pieces may be used without hindrance by the presence of said strips.

The strips 12 in an unstressed condition are illustrated in full outline before assuming a stressed position due to the weight of a shelf.

Referring next to Figure 5, this view illustrates how the posts or columns may be used for receiving and locating marginal edge portions of partitions or wall panels 20, the latter being easily located in the slots 6 of the post. The panel may be provided with hooks at their edges for engagement with the slotted insert in the post but such hooks are not essential.

Referring lastly to Figures 6 to 10, the post of this embodiment is triangular in shape and consists of an extrusion of aluminium or other suitable material capable of being cut to a required length. In Figure 7 (in which the top of the post is shown cut off an an acute angle for clarity) the fitting of a toggle connection is shown at the left hand side of the post and a slotted insert and hook connection at the right hand side. The post comprises, as viewed in transverse cross section, a centre portion or core 21 extending axially for the complete length of the post and is formed with three radial webs 22 that combine to form three single channels 23 that are undivided by flanges and are partially closed at their mouths by corner pieces 24, resembling arrow heads, each consisting of portions 24*a* that extend one to each side of each web 22 so as to leave between themselves a slot 25 and against which portions 24*a* can be abutted means for receiving the inner end of shelf brackets 26 or 34 as about to be described with particular reference to Figure 7.

As indicated at the left hand side of this Figure the inner end of a bracket 26 is formed with a tenon 27 that can be engaged between and overlap the edges of the gap 25 between adjacent portions 24*a* of the corner pieces 24 and screwed by screws 28 at its upper and lower ends to toggle or clamping pieces 29 having serrated or roughened surfaces and which, after the bracket 26 has been slid to a required height can, by final tightening of the screws 28, be gripped against the inner marginal faces 24*b* of the corner pieces 24 (in the manner shown by Figure 2) so as to hold the bracket 26 at an infinitely variable desired height.

Rotation of the clamping or toggle pieces 29 is prevented by locating these pieces between small continuous ribs or nodules 30 formed on the webs 22 and extending longitudinally thereof.

The arrangement illustrated at the right hand side of Figure 7 shows how a channel 23 may have slid into it in an endways direction a flat rolled steel strip or insert 31 formed with a single or double line of slots or piercings 32 in selected slots of which may be engaged single or double hooks 33 of a bracket 34. When engaged in a channel 23 the longitudinal side edges of the insert 31 are located in the corners between the portions 24*a* of the corner pieces 24 and the outer parts of the webs 22 where the latter merge into the corner pieces.

Figures 8, 9 and 10 illustrate how the slotted insert strip 31 may be formed as a channel and made to be used in different alternative positions.

Figure 8 shows how the insert strips can be made as a shallow channel that opens inwardly when fitted in a post with the side flanges thereof abutting against the outer edges of the ribs or nodules 30.

Figure 9 shows how the insert strip 31 can be made as a deeper and less wide channel and made to abut against the inner opposed edges of associated ribs 30.

Figure 10 shows how the insert strip 31 can be made as a channel having outwardly inclined or sloping side flanges 31*a* that do not locate on the ribs 30 but directly on the webs 22 to one side of the ribs 30 which could, if desired be omitted with this particular arrangement.

In all embodiments the upper and lower ends of the posts may be anchored to ceilings and floors in

any suitable manner.

CLAIMS

1. A multi-sided post or column for the purpose herein referred to comprising an axial core from which radiate a number of webs defining single and undivided channels between themselves, the outer edge of the webs having extending each side thereof corner pieces, and wherein adjacent corner pieces are spaced apart at opposed edges to leave a vertical slot in each side of the post through which an end of a support bracket, or a marginal edge of partition walling, may be inserted and held in position by retaining means engageable in said slots, said retaining means comprising (a) either a toggle or clamping piece intended to be inserted through said slot and turned so as to bridge the latter at the inside of the post and to become positioned and vertically slidable and held against rotation between parallel guide ribs on the respective inner faces of the corner pieces or between ribs on said webs and which toggle or clamping pieces is fixedly engageable by a tenon provided at a fixing end of a bracket, or (b) comprises a slotted strip or insert that is inserted endways into a channel at a side of the post end that can be engaged by hooks provided on the fixing end of a bracket.

2. A post or column according to Claim 1, wherein said slotted insert is of channel-like cross section that opens outwardly of the post and having the side flanges thereof disposed at an obtuse angle to the base in which the slots are formed, said side flanges, under the influence of the weight of merchandise supported by shelving on the brackets being caused to bear against the radiating webs and acting to cause the slotted strip or insert to become a friction-tight fit in the channel and so locate the bracket at a predetermined required height.

3. A post or column according to Claim 1 or 2 that is four-sided and wherein the corner pieces are arcuate.

4. A post or column according to Claim 1 or 2 that is triangular in transverse cross section and is formed on said webs with continuous ribs or nodules extending longitudinally thereof and between which said toggle or clamping pieces can be slidable located and held against rotation when engaged by and connected to said tenon.

5. A post or column according to Claim 4, wherein the corner pieces resemble arrow heads in shape.

6. A multi-sided post or column for the purpose herein referred to constructed substantially as hereinbefore described with reference to and as illustrated by Figures 1 to 5 or 6 to 10 of the accompanying drawings.

7. A merchandise display system comprises posts or columns as claimed in any of the preceding Claims.

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